North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION

PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

Davis Septage Disposal Service
Hector Davis
4300 Norwick Road
Fayetteville, NC 28314

is hereby permitted to operate Septage Land Application Site with permit # **SLAS-78-05** located on SR#1713 in Robeson County at approximate position 34.94533° N latitude and -79.04235° E longitude. This site is permitted only for operations that are conducted in accordance with the representations made in the approved application, with all conditions attached to this permit, and with all of the provisions of 15A NCAC 13B.0800 -- Septage Management. Failure to operate as permitted may result in the Department suspending or revoking this permit, initiating action to enjoin the unpermitted operation, imposing administrative penalties, or invoking any other remedy as provided in Chapter 130A, Article 1, Part 2 of the North Carolina General Statutes.

This permit shall be reviewed annually to determine if soil test results and management activities are in compliance with the Septage Management Rules and the conditions of this permit. Modifications, where necessary, shall be made in accordance with rules in effect at the time of review.

Date Issued 4/16/2015

Martin A. Gallagher, Branch Head
Composting & Land Application Branch
Solid Waste Section
Division of Waste Management, NCDENR

CONDITIONS OF OPERATING PERMIT

1. This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards both surface and ground waters.

2. This site shall be operated and maintained in accordance with the nutrient management plan submitted by Hector Davis and approved by the Division of Waste Management. **The 32.6 acre site is divided into Field 1 (7.7 acres), Field 2 (7.8 acres), Field 3 (8.9 acres) and Field 4 (8.2 acres).** The fields are established in a permanent cover of coastal Bermuda. The mandatory 30-day waiting period between the last application of septage and the harvest of a crop shall be maintained. All discharges shall be at locations on the site consistent with the crop rotation in the approved plan.

3. This site shall be operated and maintained in accordance with the erosion and runoff control plan submitted by Hector Davis in such a manner as to prevent the migration of wastes off of the designated waste receiving site. Any site improvements noted in the plan must be installed within 30 days of plan approval. The installation of groundwater monitoring wells shall be required as deemed necessary by the Division.

4. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other local, state, and federal government agencies which have jurisdiction. It is the responsibility of the Permittee to be in compliance with the Federal Regulations listed in the Code of Federal Regulations, 40 CFR Part 503.

5. This permit may be modified or reissued at any time to incorporate any conditions, limitations and/or monitoring requirements the Division deems necessary to adequately protect the environment and public health.

6. **This site is only permitted for the land application of domestic septage (including portable toilet waste) and grease septage.** Domestic septage pH shall be raised to 12 or higher by alkali addition and, without the addition of additional alkali, shall remain at 12 or higher for 30 minutes prior to land application. Grease septage or grease septage mixed with domestic septage shall be raised to pH 12 or higher by alkali addition and, without the addition of additional alkali, shall remain at 12 or higher for 2 hours prior to land application. **The land application of**

commercial/industrial septage shall only occur after a waste analysis has been performed and approval has been granted by the Division.

7. **This site contains approximately 32.6 acres that are available for land application of septage.** The maximum annual application rate shall be 50,000 gallons per acre per year. At this application rate, a maximum annual volume of 1,630,000 gallons may be applied to this site. This application rate assumes equal septage distribution, on an annual basis, over the entire permitted area. Application amounts to the fields shall not exceed the maximum annual application rate or the monthly application rates as listed in the approved nutrient management plan for the site.

8. An approved above ground septage detention system with a minimum design capacity of 31,346 gallons shall be available prior to operation of this site unless an approved wastewater treatment plant is available for use during periods of adverse weather. The storage capacity may be adjusted if it is demonstrated during the operation of the site that this volume of storage is inappropriate.

9. Only the area designated on the attached site map(s) shall be utilized for septage disposal. Each load of septage discharged at the site shall be distributed from a moving vehicle in such a manner that there is no standing water when the discharge is complete.

10. Septage shall not be applied during any precipitation event, or if there is standing water on the soil surface, if the soil surface is frozen, or if the soil surface is snow covered. The Permittee shall consider pending weather conditions when making the decision to land apply in order to prevent any discharge of septage outside of the permitted boundary.

11. Septage shall not be applied during periods of high soil moisture. Septage applications that will result in ruts greater than three inches in the soil surface are prohibited.

12. Any discharge of septage outside of the permitted boundaries via runoff, aerial drift, etc. is prohibited.

13. This permit shall become voidable unless the land application activities are carried out in accordance with the conditions of this permit and in the manner approved by this Division. No one other than the Permittee or an employee of the firm named in this permit shall discharge septage at this site without prior appropriate notification and written approval from the Division.

14. Prior to any transfer of this land, a notice shall be given to the new owner that gives full details of the materials applied or incorporated at this site. The Division shall be notified prior to site closure. This permit is non-transferable.

15. **This permit shall expire on May 26, 2019.** Modifications, when necessary, shall be made in accordance with the rules in effect at the time of renewal. An application for permit renewal shall be submitted at least ninety (90) days prior to the permit renewal date. A septage application log for the period of time this permit was valid shall be submitted along with an application for permit renewal or modification. The information required in the log is described in Rule 15A NCAC 13B .0838 (e)(1) of the NC Septage Management Rules and the Code of Federal Regulations, 40 CFR Part 503.17 (b).

16. Records shall be kept in accordance with 40 CFR 503.17(b). These records shall be made available to a representative of the Division upon request.

17. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises, or place on or related to the disposal site and facility at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be kept under the conditions of this permit; or may obtain samples of groundwater, surface water, or leachate.

18. Field separations in the nutrient management plan and all pertinent setbacks shall be clearly located on the site. Boundaries of the permitted septage land application fields shall be clearly marked on the ground.

19. The areas that can be used for land application of septage shall be maintained to meet the minimum setback distances as described in NC Septage Management Rule 15A NCAC 13B .0837(d) such as 500 feet from any existing wells, residences, places of business, or places of public assembly. Also, septage shall not be disposed of within 50 feet of any property line, within 100 feet of any ditch or within 200 feet of any surface water unless specified otherwise.

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

April 16, 2015

Mr. Hector Davis
Davis Septage Disposal Service
4300 Norwick Road
Fayetteville, NC 28314

RE: SLAS permit renewal
Davis Septage Disposal Service
SLAS-78-05
SR#1713 in Robeson County

Dear Mr. Davis:

The NC Division of Waste Management has reviewed your renewal application for a Septage Land Application Site permit in Robeson County. Your application has been approved and your permit, # **SLAS-78-05**, is enclosed. If you have any questions about your permit, we'll need the number in order to answer your questions.

Please read all of your permit conditions carefully. Your nutrient management and soil erosion and runoff control plans have been included in your permit's conditions. In particular, review Permit Condition 15, which states that you will need to submit septage application logs for your site in order to renew your permit. These logs need to cover the entire time your current permit is valid. For details on the information you should include, consult the NC Septage Management Rule 15A NCAC 13B .0838(e)(1) and the Federal register's 40CFR Part 503.17(b). This permit condition also states that this permit is valid until **May 26, 2019.** If you have any questions, please ask for assistance as rule violations could expose you to administrative penalties.

Please note that to land apply industrial or commercial septage at a permitted septage disposal site you must have **prior approval** from the NC Division of Waste Management. The waste must be sampled prior to being removed from the system. Generally, the Division will request that you have a waste analysis run on septage from each commercial or industrial septage generator before that type of septage is approved for land application.

Use of a land application site or septage detention or treatment facility that is not permitted may result in administrative penalties up to $15,000 per violation in accordance with NC General Statute 130A-22.

If you have any questions, please contact me at (910) 433-3352 or Martin Gallagher at (919) 707-8280.

Sincerely,

Connie S. Wylie, Soil Scientist
Division of Waste Management, NCDENR

Enclosures
cc: Glinda Davis, landowner
Robeson County Health Department

h:cla\septage\slasper\7805cl15p.doc

Fayetteville Regional Office
225 Green Street, Suite 714, Fayetteville, North Carolina 28301-5095
Main Phone: 910-433-3300 \ Internet: www.ncdenr.gov

June 9/2014

APPLICATION FOR A PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

North Carolina Department of Environment and Natural Resources
Division of Waste Management – Solid Waste Section
1646 Mail Service Center, Raleigh, NC 27699-1646

I. Site and Operator Information

1. Applicant: Hector E Davis
   Address: 4200 Norcosick Rd
   Fayetteville NC 28314
   Phone: 910-323-1911

2. Contact person for site operation (if different from applicant): ______
   Title or position ______ Phone ______
   Address: Same as above HED

3. Landowner: Hector E Davis & wife Glinda S Davis
   Address: 4200 Norcosick Rd
   Fayetteville

4. Site Location: County Robeson State Road Number 1721
   Directions to site: 2506 Davis Bridge Rd Parkton NC.
   go out of Parkton NC on Barlow Rd ½ mile Turn Right Davis Bridge Rd House Tailor - Office - down dirt road to double power lines in Field.

5. Indicate whether request is: new ______ renewal X modification ______

   For a permit renewal or modification, provide the following information:
   Existing site permit number: 78-05 permit expiration date: Oct. 9-14

6. Number of acres meeting the requirements of the N.C. Septage Management Rules: 32 acres.

7. Substances other than septage or grease trap pumpings previously disposed of on the site:
   (a) None X, or (b) Attach a list indicating other substances, the amounts discharged, and the dates of discharge.

8. Attach written, notarized landowner authorization to operate a septage disposal site signed by the landowner (if the permit applicant does not own the property). ***If a corporation owns the land use a corporate landowner authorization form. If limited liability company owns the land, use a limited liability company landowner authorization form.***

9. Attach site evaluation report, including aerial photograph and soil analysis with metals results, unless the Division prepared the report.

10. Attach a vicinity map (county road map showing site location).

(over)

II. Site Management Information:

The following information shall be included with the application form:

1. Nutrient Management Plan
2. Soil Erosion and Runoff Control Plan

3. Alternative plan for disposal (detention facility permit number or wastewater treatment plant authorization): P.W.C City of Fayetteville-Cross Creek Plant
WASTEWATER PLANT & Site Detention -TANKS 12000 gall.
4. Types of septage proposed to be discharged at the site (check all that apply):
   (a) Domestic septage pumped from septic tanks ✓
   (b) Grease trap pumpings ✓
   (c) Portable toilet waste ✓
   (d) Commercial / Industrial septage ✓

5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): Pumped From Truck into Storage Tanks - Pumped From Storage Tanks Lime Add PH-12 For 20 mintes For Septage 2 Hour For grease be For Applying to Site Septage will be Applied From Vehicle with Spreader Attachment.
6. Proposed method of applying septage to land, including septage distribution plan if required * (use additional paper to explain if necessary): P.H. For 20 Minute For Septage And 2 Hours For Grease be For Applying To Site Septage will be Applied From Moving Vehicle with Spreader Attachment.
7. Demonstration from the appropriate state or federal government agency that the land application site complies with the Endangered Species Law ** or if any part of the site specified is not agricultural land (use additional paper to explain if necessary): N.C Site is agriculture Hep *

III. Certification

I hereby certify that:

1. The information provided on this application is true, complete, and correct to the best of my knowledge.
2. I have read and understand the N.C. Septage Management Rules, and
3. I am aware of the potential consequences, including penalties and permit revocation, for failing to follow all applicable rules and the conditions of a Septage Land Application Site permit.

Signature*** 6-5-14 Date

Hector E Davis Owner & Mgr

Print name Title

Note: This application will not be reviewed until all parts of the application are complete.
*** Refer to Section .0837(e) of the N.C. Septage Management Rules.**
**** Refer to Section .0837(g) of the N.C. Septage Management Rules.**
*****Signature of company official required.**

Landowner's Authorization to Operate a Septage Land Application Site

North Carolina Department of Environment and Natural Resources
Division of Waste Management - Solid Waste Section
1646 Mail Service Center, Raleigh, NC 27699-1646

RECEIVED
JUN 26 2014
DIVISION OF WASTE MANAGEMENT
FAYETTEVILLE REGIONAL OFFICE

I, GLINDA S. DAVIS HECTOR E. DAVIS (name of site owner) hereby certify that I am the owner of 49.09 acres of land located STATE ROAD 1713 ROBESON COUNTY and identified by Book 466 PAGE 179 Book 489 PAGE 106 (book and page of recorded deed or tax map parcel) and that I agree to allow HECTOR E. DAVIS (name of site operator) to use said land for septage land application for a period of 5 YEARS (length of time), beginning MAY 26, 2014 (month, day and year) and that I have read the North Carolina Septage Management Rules *, and I understand and agree to maintain the restrictions on land use after septage land application ends **. I further understand that no septage may be land applied until the Division of Waste Management has issued a permit for a septage land application site. The above described property is owned solely by me or jointly with HECTOR E DAVIS GLINDA S DAVIS (names of all co-owners, or state none).

Signature of landowner Glinda S. Davis Date 5-26-2014

Signature of landowner [signature] Date 5-26-2014

Sworn to and subscribed before me this _____ day of _____, 20_____.

[signature]
(Notary Public) JAY L. MORRIS

My Commission expires: JUNE 18, 2016

JAY L. MORRIS NOTARY PUBLIC CUMBERLAND COUNTY, NC (OFFICIAL SEAL)

* 15A N.C. Admin. Code 13B Section .0800

** As required by Rule .0843

NUTRIENT MANAGEMENT PLAN GUIDELINES FOR SEPTAGE APPLICATION TO BERMUDA GRASS OVERSEEDED WITH ANNUAL WINTER GRAIN FORAGE

Five Year Update - ***Note***: Retain previous plan maps and original supporting attachment material, but replace the Nutrient Management Plan narrative with this one. Given the period of time, some recommendations have slightly changed, but nothing drastic. JEC

34.94533°N -79.04235°E

SLAS # - 78-05 Latitude: 34 56 44 Longitude: 79 02 40 Parkton

Site Operator: Hector Davis
Davis Septage Disposal Service
4300 Norwick Rd.
Fayetteville, NC 28314
(910) 323-1911 Mobile: 322-2810

Landowner: same

A. General Information

1. Periodic sampling of the septage for waste analysis content will occur about three times a year. Suggestions on sampling, forms and instruction have been provided to the operator. The standard "book" value 2.6 pounds (lbs.) of nitrogen (N) per 1,000 gallons of septage is used in this nutrient management plan.

(32.6) (~~30.28~~)

2. Site of disposal is 32 acres of Farm Service Agency (FSA) tract number 7329. The field is located on the northeast side of SR 1713 (Davis Bridge Rd.), in northern Robeson County on the border of Hoke County. Identifiable landmark is a high voltage power line splitting the field and crossing the highway. Entrance to site is gated and posted.

3. The dominant soil series type is mostly Pocalla Loamy Sand with some Wakulla Sand on the upper side near the dirt road entrance. A pocket of Pactolus Loamy Sand is near the woodline, farthest away from SR 1713.

Pemeability is rapid to moderate and available water holding capacity is low for these soils. Wakulla sections of the field would be expected to dry out the quickest and most susceptible to drought effects. The seasonal high water table is more than five feet below the surface and the soils have no major limitations for crop use with expected proper management.

The soil types are listed as zero to maximum six percent slope and the permanent vegetation cover of winter overseeded bermuda grasss present no **Erosion Control Plan** problems. The exception may be truck traffic on the roads which can be alternated,

seeded and surface water diversion ditches used if field access truck traffic areas become rutted.

4. Septage will not be applied where the site is untrafficable, defined as soil that will allow a loaded truck to leave a depression (field ruts) in sod greater than three inches deep.

5. Septage storage is provided on site to account for the average volume of septage pumped per week, or an alternative plan, such as disposal at a municipal waste treatment plant (probably Fayetteville) is in place. A "Detention Facility Permit" is required and on file for the on site storage tanks and/or documentation of authorization to discharge septage into a permitted wastewater treatment facility. 10,000 gallons

B. Crops to be Grown and Planting Times

(~~32.25~~)(32.6)

The entire 32 acres is over five year old established coastal bermuda grass which has been and will continue to be overseeded each the fall with an annual winter grain - both harvested as forage crops (hay).

As the bermuda grass slows growth and begins to go dormant, the last cutting of hay should leave about four inches of grass remaining. A winter annual grain like rye can be overseeded (drilled; 100 lbs. of seed or broadcasted; 120 lbs. of rye or wheat, 130 lbs. of oats or 140 lbs. of barley) as early as September, in October and at least by mid November. Ryegrass or annual ryegrass is not recommended and is a much smaller seed. If the winter grain is broadcasted with the disk blades running straight, the disk can be run across the field in a checkerboard design before planting. This will cut slits in the turf but not turn the soil. The winter grain seed should be planted about one to two inches deep. Areas with less than 80% groundcover of bermuda shall be repaired by sprigging 60 bushels/acre in April

The field is divided into four quadrants. An enclosed example of a two field rotation can be a guide for each half of the field. The entire field will be cropped and managed the same.

C. Nitrogen (N) Needs for Crops Grown

The Realistic Yield Expectations (RYE) for the crops is largely based on soil type. However, rainfall, fertility and management greatly affect yield.

An average of all soil types results in the recommended RYE of 5.0 tons of bermuda grass hay per acre, and 2.0 tons/acre of winter grain harvested as forage. Fifty pounds of N should be supplied for each ton of forage growth.

5.0 tons/ac bermuda grass X 50 lbs. N/ton = 250 lbs. N/acre X 32 acres = 8,000 lbs. N
2.0 tons/ac of winter grain X 50 lbs. N/ton = 100 lbs. N/acre X 32 acres = 3,200 lbs. N
Total N for the field for a calendar year and BOTH crop growing seasons is 11,300 lbs.

pg 2/9

50,000 gallons of septage per acre applied in a calendar year provides 130 lbs. of N/acre (50,000 X 2.6 lbs. N/1,000 gallons), and 4,160 total lbs. of N (130 X 32 acres). So, some N will need to be strategically applied, especially to the bermuda grass, to maintain a good crop since the septage will not provide enough N. Also, keep in mind two other factors: 1. Septage very well may not have 2.6 lbs. of N/1,000 gallons; and 2. The RYE values and pounds of N previously listed are the *maximums* of N permitted to be applied. The maximum does not need to be applied to maintain a growing crop. Given proper fertility and rainfall, adding more N just increases yield - maybe not a key objective when having to purchase commercial N.

Realistically, much of the yearly permitted N will probably be applied during the growing season of the annual winter grain forage crop since that is a high pumping time. Monthly volume restrictions must be followed (included in table form) but, with the winter grain receiving much of the permitted N from septage, some commercial application of N will probably be needed during the summer bermuda grass growing season. The guideline for this, whether septage or commercial N, is about 50 lbs. of N/acre/cutting (given 2-3 bermuda grass hay cuttings per summer. No more than 83 lbs. of N/acre/cutting should be applied (again, based on 3 hay cuttings per summer). Result: bermuda grass hay can do well with 100-150 lbs. of N/acre; however, this will result in lower yields (than the maximum 250 lbs. N/acre) while reducing the need for purchased commercial N during the summer.

D. Application Rotation/Amounts for Cutting Forage for Hay:

To enable one or two sections of the subdivided 32 acres to always be available (weather permitting) for septage application, the enclosed charts suggest a rotation, septage volumes (gallons/acre/month) and resulting lbs. of N applied. The rotation is to allow for the mandatory 30 day "no septage application period" before harvest. The basic rotation is: septage application, 30 days of no septage application (possibly some commercial N), harvest, septage application, 30 days of no septage application, harvest, and so on. This rotation is also a good agronomic management practice.

Annual winter grains are usually only cut for hay once. This is most desirable before the plants form a seed head, usually in April. Harvesting the overseeded winter grains can take place 30 days apart to allow for continuous septage application on the greening up bermuda grass. This time period can be from mid to late March to the end of April.

Chart ONE *Example* of Two Field Septage Application Rotation
with bermuda grass overseeded with annual winter grain (rye) to comply with the mandatory 30 "no septage application waiting period" before harvest.

FIELD ONE: (Or subdivided section - half or quadrant)

Apply septage October - January
Stop septage application February 1
Cut annual winter grain for forage after March 3.

Apply septage after harvest, March and April
Stop septage application May 1
Cut bermuda grass after June 1

Apply septage after harvest during June
Stop septage application July 1
Cut bermuda grass after August 1

Apply septage after harvest during August
Stop septage application September 1
Cut bermuda grass after October 1

Plant annual winter grain after last bermuda grass cutting (leaving 4 inches high)
Apply septage after last bermuda grass harvest to annual winter grain October - January.

FIELD TWO: (Or alternating subdivided section - half or quadrant)

Apply septage September/October - February
Stop septage application March 1
Cut annual winter grain for forage after April 1

Apply septage after harvest, April and May
Stop septage application June 1
Cut bermuda grass after July 1

Apply septage after harvest during July
Stop septage application August 1
Cut bermuda grass after September 1

At this point, annual winter grain may be planted and septage can be applied September through February. If bermuda grass is to be cut again and annual winter grain planted later: Stop septage application in late September, wait 30 days and do final bermuda grass cut in late October - followed by annual winter grain planting and septage application until February.

Chart TWO *Example* of Recommended *Maximum* Septage Application Rates (volumes - gallons/acre) and lbs. of N/acre by Month

Dependent upon soil fertility, management, crop yields, growing conditions, crop growth stage and weather at time of desired application.

Month	Gallons/acre	Septage Applied on Crop	lbs. N / Acre
January	5,000	overseeded annual winter grain	13
February	10,000	overseeded winter gain (e.g., rye)	26
March	10,000	rye / bermuda grass	26
April	10,000	primarily bermuda grass	26
May	15,000	bermuda grass	39
June	15,000	bermuda grass	39
July	15,000	bermuda grass	39
August	10,000	bermuda grass	26
September	10,000	bermuda grass / rye	26
October	10,000	primarily overseeded rye	26
November	10,000	rye or other annual winter grain	26
December	10,000	overseeded annual winter grain	26

Notes: Rye listed for all annual winter grains.
50,000 gallons septage /acre/calendar year maximum permitted.
(i.e., the above are agronomic nutrient allowances for the amount of septage that could be applied during a given month. Total of all months exceed permit. If permitted gallons of septage/acre were reached by mid summer on a section, then septage application must cease and any needed N would be supplied commercially.)

E. Application Method:

Septage will be evenly applied over the entire permitted site during the course of the two crop growing seasons by moving tanker truck with a discharge splash plate. Use of stakes/flags to mark areas according to last and next application areas (quadrants) are needed for the drivers and need to take into account average coverage width. An overlap of about five feet is recommended for a 20-30 feet wide application width.

F. Additional Fertility Requirements:

1. Nitrogen from septage applications alone will not be enough to maintain good crop conditions upon which to apply septage. This is especially true for the permanent bermuda grass. Additional N to meet a suggested recommended minimum of 100-150 lbs. of N/acre for bermuda grass (regardless of N source), is covered in **Section C: Nitrogen Needs for Crops Grown.** The most common sources of commercial N are liquid nitrogen or ammonium nitrate (34-0-0). Examples: 150 lbs./acre of 34-0-0 will provide 50 lbs. of N/acre - a good application amount following a hay cutting if no septage application is anticipated within 30 days and the TOTAL N amount/acre has not been exceeded.

2. Phosphorus and potassium must be added in accordance with the annual soil test result recommendations for crops grown. NCDA Soil Test Report # 30142 dated March 26, ~~1999~~ 1998, reveals phosphorus will probably not need to be added any time soon, if at all, with continued septage application.

3. Potassium (potash) especially needs to be monitored since septage contains little of this nutrient. The most common and cheapest commercial source is murate of potash (0-0-60). Example: 333 lbs./acre of 0-0-60 (potash) will provide 200 units (lbs.) of potassium per acre - a common recommended amount on your soil test reports. Potassium is important for root growth and preventing winter kill of the bermuda grass.

4. Lime needs to be added according to soil test result recommendations. It is very important for crop growth to maintain proper pH. The pH needs to be in the range of a minimum 6.0 and a target of 6.5. It was once thought that the hydrated "burnt" lime added to the loads of septage would raise soil pH. However, this is not true as the duration of neutralizing ability of that type of lime is not very long (much less than a growing season). Agricultural limestone should be used with dolomitic limestone preferred. Dolomitic limestone also contains the nutrient magnesium.

5. The entire field can be treated according to soil test result recommendations, regardless of field buffers. N is not tested but recommendations are provided on the soil test report results for crops grown. In buffer "set-back" areas not receiving any septage application, commercial N needs to be applied as previously suggested (100-150 lbs.

N/acre minimum applied two to three times during the bermuda grass growing season (April - September).

5. Each year, fertilization will be according to the latest annual soil sample test result recommendations. Soil samples also need to monitor for cadmium, nickel, lead, selenium, chromium and arsenic in addition to routine tests of copper, zinc and other fertility factors. One sample should not represent more than 10-15 acres. One sample could be taken from each quadrant (4) or half (2) of the field - however managed. One sample is a little bit of a stretch to represent 32 acres.

G. Harvest of Crops and Use:

1. The bermuda grass will be cut and harvested as hay. Harvesting can be about every one to two months, depending on growing conditions and alternating septage application (30 day waiting period). Amount of forage harvested should be monitored by at least counting bales (per quadrant ?). Two cuttings of bermuda grass hay should be expected will proper fertility and low rates of N (100-150 lbs. or units of N/acre). Likewise, 200 lbs. of N/acre would probably result in three cuttings and 250 lbs. of N/acre (maximum RYE for this site) could result in four hay cuttings with optimum growing conditions.

Bermuda grass should generally be cut when 12 to 18 inches tall. Overseeded annual winter grains could possibly be cut at 10-12 inches in late fall if desired or needed (but most likely not), and will be cut in late winter/early spring so the bermuda grass can begin greenup (mid to late March through April).

2. A 30 day waiting period, already discussed, must be observed between the last septage application and harvest. Refer to charts for rotation suggestions allowing this 30 day waiting period. Blank maps are provided to schedule and document actual application according to plan.

3. The forage will be harvested as hay by a third party, using it for animal feed.

Soil Erosion and Runoff Control Plan

As referred to in **Section A General Information, # 3,** the soil types are listed as zero to maximum six percent slope and the permanent vegetation cover of winter overseeded bermuda grasss present no **Erosion Control Plan** problems. The exception may be truck traffic on the roads which can be alternated, seeded and surface water diversion ditches used if field access truck traffic areas become rutted.

Buffer or set-back areas have been outline on maps. It is a good idea to maintain a continuous 50 feet buffer around the entire field of good growing permanent vegetation of bermuda grass. This will also assist in curbing any unlikely potential runoff.

Other suggestions:
Encourage truck operators to use screens and obtain a pH meter to monitor and ensure that the septage is maintained at a pH of 12 for the required minimum of 30 minutes before field application. Screening while pumping into the truck is more practical than at discharge.

Submitted by: _____ Date: 4-29-09

Hector Davis, Site Operator

Plan prepared with assistance by: _____ 6-26-14

James Cochran
Agricultural Extension Agent
Robeosn County Center of the
North Carolina Cooperative Extension Service
P.O. Box 2280
Lumberton, NC 28359-2280
(910) 671-3276

Date: August 11, 1999

FIELD ROTATION

A 30 day waiting period shall be observed between the last application of septage and harvest.

January, February, March -	Field 3
April, May, June -	Field 2
July, August, September -	Field 1
October, November, December -	Field 4

Signature [signature] Date Sept 10-09

[signature] 6-26-14

January, Feb, March — 1

April, May, June — 2

July, August, Sept — 1

October, November, December — 2

This rotation will be followed during time of crop issues

[signature] 9-19-14

Grazing Amendment to Nutrient Management Plan

All nitrogen recommendations for forages will be 75% of the realistic yield expectation nitrogen rate should the forage be grazed.

For a land application site to be grazed, a minimum three field rotation is established. The rotation is such that one field receives septage, one field is idle with the 30 day waiting period and one field is being grazed. As this site has four permitted disposal fields plus an additional wooded area for the cattle, there are a sufficient number of fields for a grazing rotation to be followed. The cattle shall be controlled and no cattle shall be on a disposal field unless land application has ceased for at least 30 days. The 30-day waiting period must be observed between the last application of septage and harvest or grazing.

Signature

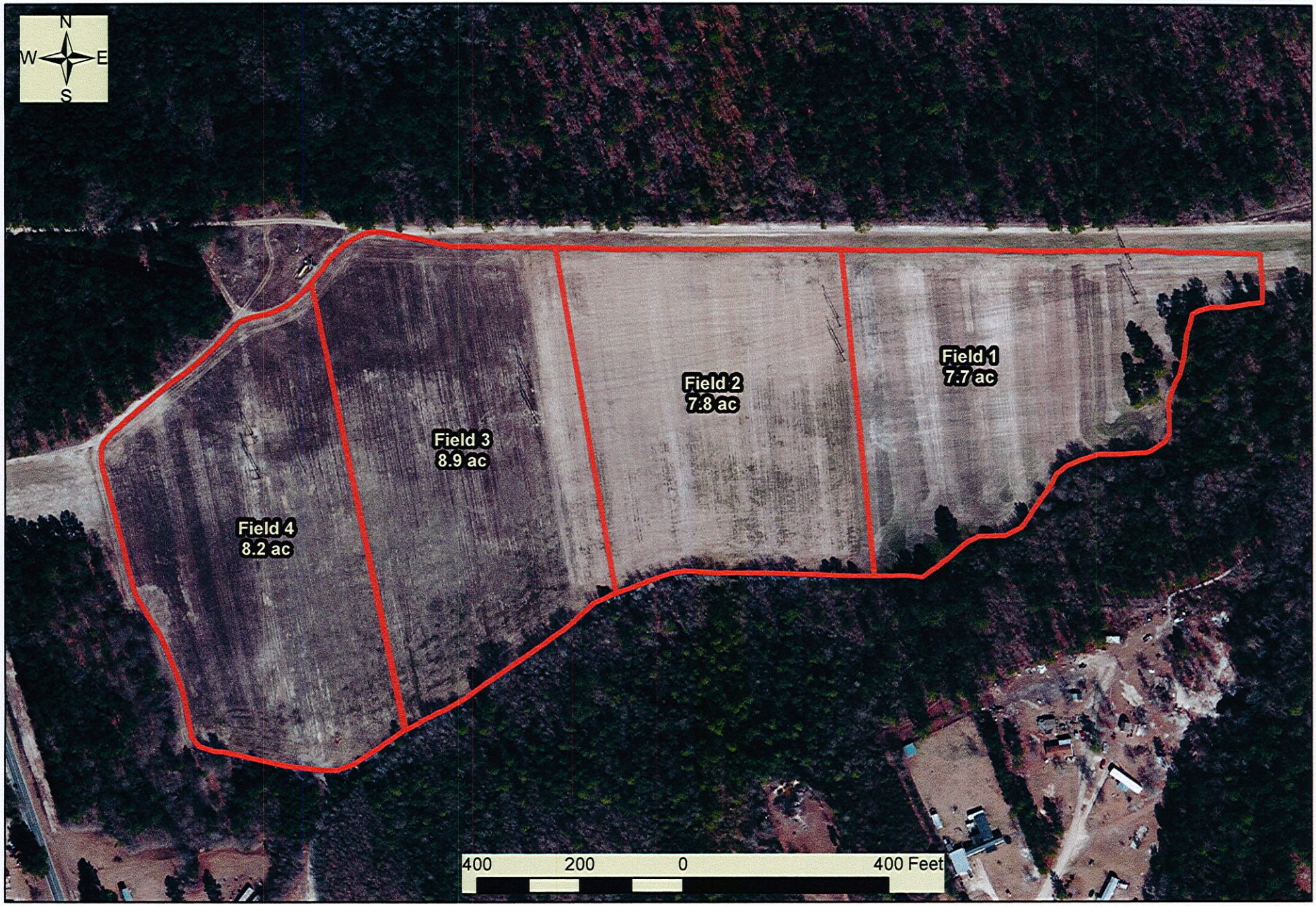
Nov-1-2011
Date

Hector E Davis
H-410 323-1911
M 410 620 9467

6-26-14

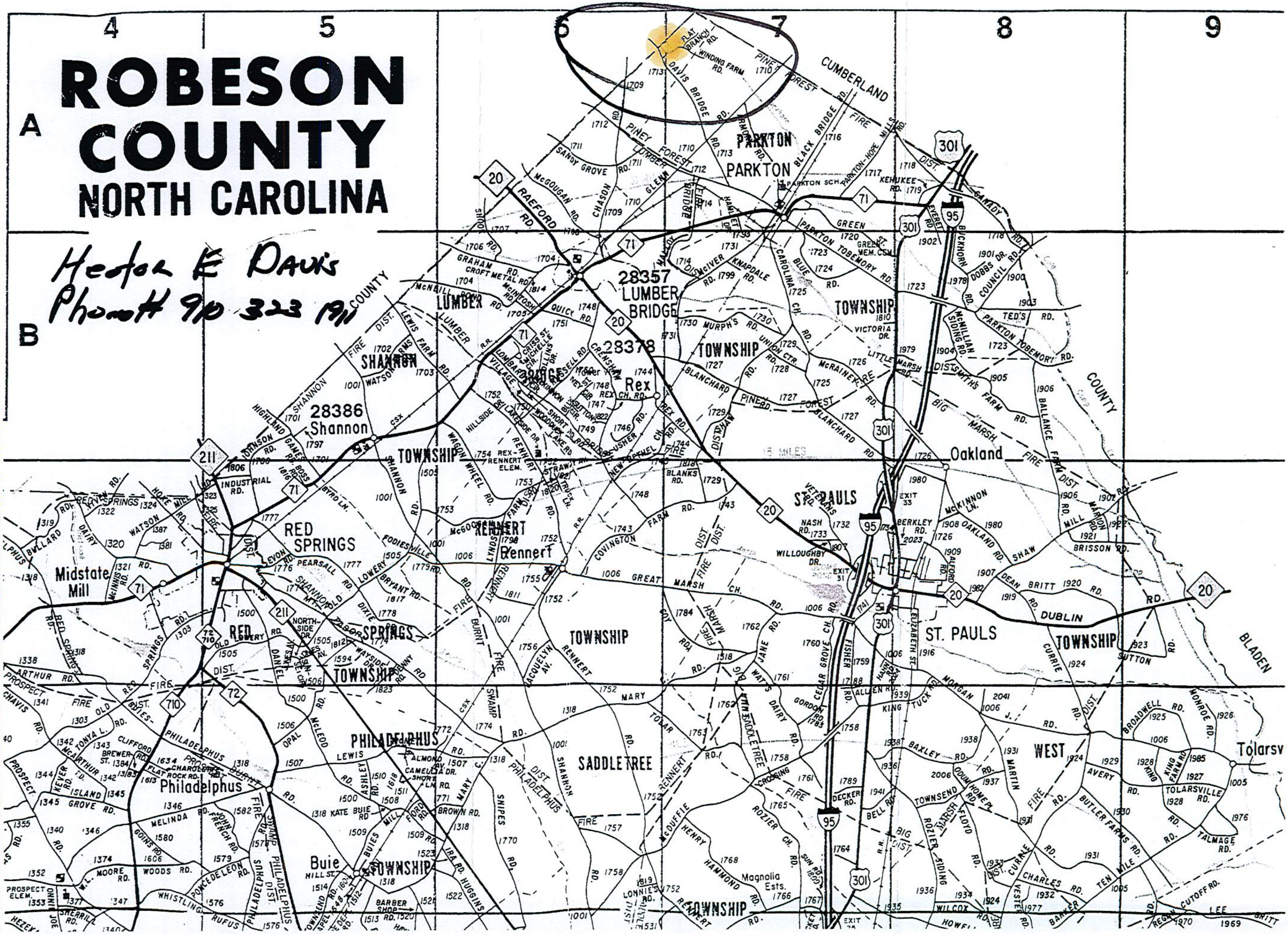
SLAS-78-05

34.94533°N latitude
-79.04235°E longitude



Source: Aerial image from Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community. Site boundary from NC DENR Division of Waste Management. Map created by NC DENR Division of Waste Management for permitting purposes only.

crc, May 2015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Midstate Mill
Philadelphus
Buie
Magnolia Ests.
SADDLETREE
TOWNSHIP
WEST
DUBLIN
DAVIS BRIDGE RD.
WINDING FARM RD.
FLAT BRANCH RD.
PINEY FOREST RD.